

REMARKS/ARGUMENTS

Claims 44-49 and 104-148 are active in this application.

Claims 47-49, 105-109, 111-115, 117, 118, 120-124, 127-130, 132, 133, 137-142 and 145-148 were withdrawn from consideration by the Examiner.

Support for the Amendment to Claim 44 is found on page 2, lines 23-27 and page 13, lines 13-15.

In view of the amendments submitted herein and the Request for Continued Examination filed herewith, Applicants request reconsideration of all outstanding rejections.

The Examiner considers that the feature that “the polymer is water-soluble in the specific range of 5 to 80°C at a concentration of at least 10 g/l” cannot be found in the description as originally filed. However, it is clear that the solubility in water of the entire, whole, polymer is dictated by the solubility in water of the water soluble units. The water-soluble units are soluble in water at a temperature of from 5°C to 80°C, to a proportion of at least 10 g/l. Thus obviously, the polymer taken as a whole, which includes those water soluble units, is soluble in water in the same temperature range of from 5°C to 80°C to the same proportion.

Moreover, the claimed copolymers (the entire copolymers) have no cloud point, no LCST whereas the copolymers of the cited documents have an LCST and thus exhibit a cloud point.

This is the fundamental difference between the polymers defined in the claims and the polymers of the cited documents.

Page 2, lines 23 to 27 of the specification describes that “The gels obtained with these copolymers (i.e. the copolymers of the prior art, including the copolymers disclosed in the references cited by the Examiner) are opaque and have an LCST unlike the polymers of the

invention which comprise units with an LCST but whose overall behaviour is not of LCST type and which lead to transparent gels”.

The inventive copolymers lead to transparent gels at any temperature, and thus also between 5°C and 80°C, whereas the polymers having an LCST may indeed lead to transparent gels at some specific temperatures but will lead to opaque cloudy gels at other temperatures, because as discussed on page 13, lines 13 to 15 “the cloud point is reflected by the opacification of the solution or the loss of transparency”.

To further make this point clear in the claims, claim 44 has been amended to define that the copolymers have no cloud point.

MERCHANT based rejection

The Examiner considers that the demulsifier of MERCHANT must be water-soluble at room temperature (around 25°C) at 5% by weight (see column 5, lines 33 to 49).

The Examiner considers that “said water solubility falls within the range of water solubility presently claimed”.

The fact that the demulsifier is water-soluble at 25°C does not mean in any way that the demulsifier is water-soluble in the whole (entire) range of from 5°C to 80°C.

To make this point even more clear, Claim 44 has been amended to define that the polymer is water soluble in the entire range of 5°C to 80°C

The Examiner states that the argument with regard to the “Malcolm publication” is not persuasive, as they are limited to only one of the many embodiments taught in MERCHANT and namely the p-nonyl phenyl formaldehyde resin.

The Examiner considers that many other copolymers including LCST units and water soluble units are disclosed in MERCHANT.

The Examiner further considers that the teachings of MERCHANT cannot be restricted to specific example (Example 1 p-nonyl phenyl formaldehyde resin).

The applicant has demonstrated that the specific compounds unambiguously identified in the MERCHANT reference are different from the claimed copolymers. The general disclosure otherwise provided in the cited reference does not provide the requisite disclosure so as to maintain the rejection.

KOERNER rejection

The Examiner makes reference to the passage on column 6, lines 24 to 28 of KOERNER where it is mentioned that a polyoxyethylene-polyoxypropylene methylpolysiloxane has a cloud point of 29°C in a 4% aqueous solution.

As explained above, the polymers defined in the claims have no cloud point.

Thus, the copolymers are clearly different from the polymers of KOERNER which exhibit a cloud point.

The Examiner concludes that Koerner's polymer is water soluble below 29°C and therefore within the range of water solubility claimed.

Even if the copolymer cited in KOERNER column 6, lines 24 to 28, was water soluble below 29°C, it is not water soluble at all temperatures between 5°C and 80°C as the claimed copolymer. As noted above, this feature of the polymer in the claims has been further defined.

FOGEL rejection

The Examiner makes reference to column 4, lines 46 to 48 and to column 7, lines 45 to 48 of FOGEL where it is specified that the alkoxyate esters have a cloud point of less than 15°C.

Once again, as explained above, the claimed polymers have no cloud point because they have no LCST. Thus, these copolymers are clearly different from the polymers of FOGEL which exhibit a cloud point. As noted above and apparent from claim 44, this feature has been made more explicit in the claims.

The Examiner asserts that the polymer of FOGEL is water soluble at any temperature than 15°C. However, said copolymer is not water soluble over the whole range 5°C to 80°C as has been more clearly specified in the polymers used in the claims.

The Examiner further asserts that “even if the copolymers have cloud points at 65°C, they would still be water soluble below 65°C, and thus within the claimed solubility range of 5 to 80°C”. Thus, according to the Examiner, the polymers of FOGEL are not water soluble above 65°C, and thus they are not water soluble over the whole range of from 5°C to 80°C as required by the claims.

YAMAMOTO rejection

The Examiner makes reference to column 2, lines 12 to 46 of YAMAMOTO wherein a dimethyl polysiloxane polyoxyalkylene copolymer having a cloud point up to 45°C is described.

The copolymers in the claims have no cloud point at any temperature because they have no LCST. Thus the copolymers defined in the claims are clearly different from the polymers of YAMAMOTO which have a cloud point.

The Examiner considers that the polymer of YAMAMOTO cited above is water soluble to 45°C.

However, Yamamoto's polymer is not, as that defined in the claims, a copolymer, water soluble over the entire temperature range of from 5° to 80°C.

The Examiner further asserts that component E (col. 3, lines 45 to 65 of YAMAMOTO) is water soluble at room temperature and therefore is water soluble within the claimed range of 5°C to 80°C.

Again said component E is water soluble at a specific temperature (around 25°C) and not at all temperatures between 5°C and 80°C.

BRENEMANN rejection

According to column 2, line 33 column 3, line 7, the “water soluble organo modified silicone polymer demulsifier” of BRENEMANN has a cloud point.

The polymers in the present claims have no cloud point because they have no LCST.

Thus, our copolymers are clearly different from the polymers of Brenemann which have a cloud point.

The Examiner makes reference to column 2, line 33 to column 3, line 7 of BRENEMANN “the mixture is heated to a temperature of at least 5°C, preferably 10°C, and most preferably 15°C, or more above the cloud point of the water soluble organo modified polysiloxane emulsifier”. The heating temperature is from 25°C to 100°C : see column 3, lines 5 to 7.

Thus, the widest possible range for the cloud point is from 10°C (i.e. 25-15°C) to 95°C (i.e. 100-5°C). The 115°C cloud point value found by the Examiner is clearly erroneous.

However, page 7, lines 25 to 35 of BRENEMANN states that the polyether modified polysiloxane emulsifier has a cloud point of between 25°C and 90°C preferably between 40°C and 90°C and not preferably between 40°C and 70°C. Therefore, the copolymer is not water soluble between 5°C and 80°C.

It seems that the Examiner considers that in BRENNEMANN the polyether groups are the water soluble units and LCST units.

The polymer of BRENNEMANN does not contain any water soluble group because the polyether groups have an LCST, when heated.

Moreover, as is apparent from the definition of the polymer in the claims (e.g., claim 44), the water-soluble units and the LCST units are different.

YABUTA rejection

In paragraphs [0014], [0097] and [0100], YABUTA describes that the coating composition comprises a water soluble polymer that has a cloud point within the temperature range of 30°C to 90°C.

Again the copolymers defined in the claims have no cloud point and are therefore clearly different from the polymers of YABUTA.

The Examiner asserts that the polymers of YABUTA is soluble at temperatures less than 90°C.

Applicants disagree. The cloud point of the YABUTA's polymer is from 30°C to 90°C and not up to 90°C. The polymer of YABUTA is therefore not soluble over the whole temperature range of 5°C to 80°C.

MAROY rejections

The demixing temperature of 5 to 40°C at 1% by mass in water makes reference to the units with an LCST in the claims. The polymers of MAROY have LCST units exhibiting demixing temperature above 100°C at 1% by mass, or of 48°C at 1% by mass, or above 60°C.

Therefore, these polymers forming the groups with an LCST of MAROY cannot be the same as the groups with an LCST of the claimed polymers.

As discussed above the polymer in the claims have been clarified so that it is clear that water soluble in the entire range of 5°C to 80°C (i.e. at any temperature within that range), the polymer has no cloud point and that the units with an LCST are different from the water-soluble units. These points taken together with previous replies make it abundantly clear why the claims are different from those of the cited references.

Reconsideration and withdrawal of all outstanding rejections is requested.

Applicants request that the rejection of Claims 44-46, 104, 110, 116, 119, 125, 126, 131, 134-136, and 143-144 under the doctrine of obviousness type double patenting in view of claims 25-67 of co-pending application no. 10/069,981 be held in abeyance since the alleged conflicting claims have not yet been patented (see MPEP § 822.01).

Application No. 10/069,983
Amendment

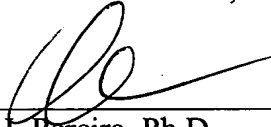
Applicants also request allowance of this application.

Respectfully submitted,

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